

Amendments To The Claims:

1-14. (canceled)

15. (currently amended) A device for the temporal expansion or compression of a time period for duration of a sequence of audio samples in a data transmission network to adjust audio playback speed without affecting tonal pitch of the sequence, comprising:

an input for receiving the-a first sequence of audio signal samples of a signal;

a memory unit operatively connected to the input to stores the samples;

a control unit that cyclically controls the temporal expansion or compression of the first sequence based on a conversion factor specifying a number of samples to delay; with a working cycle having a predetermined number of working steps for processing a sub-sequence of the sequence of samples;

a delay unit operatively connected to the input memory, wherein the delay unit references the sample to be processed in one of the number of working steps, and determines a delayed sample from the memory unit that has been delayed by the number of samples to delay in comparison to the sample to be processed;

a filter unit, comprising:

a first multiplication unit operatively connected to an output of the memory unit and to a first coefficient unit providing a first coefficient in accordance to a first coefficient function, the first multiplication unit providing an output of the product of the output of the memory unit and the first coefficient, and

a second multiplication unit operatively connected to an output of the delay unit and to a second coefficient unit providing a second coefficient in accordance with to a second coefficient function, the second multiplication unit providing an output of the product of the output of the delay unit and the second coefficient; and

a merge unit configured to generate a modified version of the first sequence of audio signal samples, characterized by a playback speed different than that of the first sequence without imparting a change in tonal pitch to the modified version relative to the first sequence, by: merging a filtered second sequence, derived from the first sequence, processed through the filter unit and output by the first multiplication unit, with a time-staggered and filtered third

sequence derived from the first sequence, processed through the filter unit and merging the outputs of the first and by the second multiplication units, wherein the first and second coefficients each have a value which changes as a function of time between zero and one and, throughout the working cycle, the square of the first coefficient plus the square of the second coefficient equals one.

16. (cancelled)

17. (currently amended) The device according to claim 15+6, wherein the first coefficient starts with 1 at the beginning of the working cycle and changes in accordance with the first coefficient function wherein the first coefficient changes linearly or in accordance with a sigmoid function.

18. (currently amended) The device according to claim 15+6, further comprising a time-variant attenuator filter connected down stream from the merge unit.

19. (currently amended) The device according to claim 18, wherein at least six audio sequences, each units of approximately 30 ms, are processed in a working cycle.

20. (currently amended) The device according to claim 15, wherein the sub-sequences include including at least fifty eight percent of all the samples of a sequence.

21. (currently amended) The device according to claim 15, wherein the processed sub-sequences include including less than half of all the samples of a sequence.

22. (currently amended) The device according to claim 15, further comprising: A device for the temporal expansion or compression of a time period for duration of a sequence of audio samples in a data transmission network to adjust audio playback speed without affecting tonal pitch of the sequence, comprising:

an input for receiving a first sequence of audio signal samples;

a memory unit operatively connected to the input to store the samples;

a control unit that cyclically controls temporal expansion or compression of the first sequence based on a conversion factor specifying a number of samples to delay, with a working cycle having a predetermined number of working steps for processing a sub-sequence of the sequence of samples;

a delay unit operatively connected to the input memory, wherein the delay unit references the sample to be processed in one of the number of working steps and determines a delayed sample from the memory unit that has been delayed by the number of samples to delay in comparison to the sample to be processed;

a filter unit, comprising:

a first multiplication unit operatively connected to an output of the memory unit and to a first coefficient unit providing a first coefficient in accordance to a first coefficient function, the first multiplication unit providing an output of the product of the output of the memory unit and the first coefficient, and

a second multiplication unit operatively connected to an output of the delay unit and to a second coefficient unit providing a second coefficient in accordance with a second coefficient function, the second multiplication unit providing an output of the product of the output of the delay unit and the second coefficient;

a merge unit configured to generate a modified version of the first sequence of audio signal samples, characterized by a playback speed different than that of the first sequence without imparting a change in tonal pitch to the modified version relative to the first sequence, by: merging a filtered second sequence, derived from the first sequence, processed through the filter unit and output by the first multiplication unit, with a time-staggered and filtered third sequence derived from the first sequence, processed through the filter unit and output by the second multiplication unit;

an additional delay unit operatively connected to the input memory, the additional delay unit determining a delayed sample twice that of the first delay unit; and

an additional multiplication unit operatively connected to an output of the additional delay unit and to an additional coefficient unit providing an additional coefficient in accordance with to an additional coefficient function, the additional multiplication unit providing an output of the product of the output of the additional delay unit and the additional coefficient,

wherein the merge unit merges the outputs of the first, second, and additional multiplication units.

23. (previously presented) The device according to claim 21, wherein the second coefficient function equals a second auxiliary function minus the product of a third auxiliary function and the first coefficient function, and wherein the additional coefficient function equals the product of the negative of the second auxiliary function and the third auxiliary function.

24. (previously presented) The device according to claim 21, wherein the sum of the first, second and additional coefficient functions is equal to one.

25. (previously presented) The device according to claim 24, wherein the additional processing unit contains an all-pass with the following transmission function

$$H = (z^{-N} + \gamma) / (1 + \gamma * z^{-N}),$$

where H is the transmission function and γ determining a delay and γ has the value 0.5 or a value greater than 0.5.

26. (previously presented) The device according to claim 15, wherein the expansion or the compression is less than 20 percent.

27. (currently amended) A method for the temporal compression or expansion of a audio sequence of samples, comprising

controlling the temporal compression or expansion based on a conversion factor specifying a number of samples to delay by:

specifying a working cycle that contains a predetermined number of working steps;

specifying a sub-sequence of the sequence of samples for a working cycle;

generating during the working cycle a time-staggered sub-sequence that is time-staggered to the sub-sequence of samples; and

merging during the working cycle the sub-sequence with the time-staggered sub-sequence, wherein, prior to merging, one of the sub-sequence and the time-staggered subsequence is filtered, the filter includes a first coefficient function and a second coefficient function which each vary as functions of time in accordance with a linear function or a sigmoid function, the method further including:

generating an additional time-staggered sub-sequence, and

providing a third coefficient function changing over time in accordance with a linear function or a sigmoid function,

wherein merging during the working cycle the sub-sequence with the time-staggered sub-sequence includes merging the additional time-staggered sub-sequence,

wherein the method is associated with a device selected from the group consisting of a receiver unit of a data transmission network, a transmitter unit of a data transmission network, a music reproducing device, a dictating machine, a voice output unit and combinations thereof to adjust audio playback speed of a sequence of audio samples without affecting tonal pitch of the sequence.

28. (previously presented) The method according to claim 27, wherein prior to merging the sub-sequence and the time-staggered subsequence the sub-sequence is filtered and/or the time-staggered subsequence is filtered.

29. (previously presented) The method according to claim 28, wherein the filter includes a first coefficient function and a second coefficient function, the coefficient functions changing over time in accordance with a linear function or a sigmoid function.

30. (previously presented) The method according to claim 28, wherein the square of the first coefficient function plus the square of the second coefficient function equals 1.

31. (cancelled)

32. (previously presented) The method according to claim 27, wherein a subsection includes less than one third of the working steps of a working cycle.

33. (cancelled)